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ABSTRACT

Described are innovative uses of videotape instruction in the preservice and inservice training of special education teachers. Noted is the need to help teachers develop more effective teacher/pupil interactions. Results of evaluation studies are said to show that use of television and videotape sharpens observational skills of teachers. Micro-teaching is explained to involve taping of brief teaching experiences which are evaluated and then retaught. Research is reported to show that micro-teaching results in more effective teaching than use of conventional methods, that teachers develop increased perception of their teaching strengths and weaknesses, and that teachers rapidly overcome initial fears about being taped. Among possible innovations suggested for videotape micro-teaching in the special education practicum are use of an intercom to provide the student therapist or teacher with continuous directions, screening for personnel selection, and use of behavior checklists to help the student teacher monitor his own performance. (DB)

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The Mental Retardation Training Program, a joint project of the College of Administrative Science, College of Social & Behavioral Sciences, College of Education, and College of Medicine, is committed to the alleviation of the manpower shortage in the field of mental retardation. To this end, it provides an interdisciplinary arena for research and training through the mechanism of service to the retarded.

HISTORY

The impetus for the Training Program began with the Report of the President's Panel on Mental Retardation in 1962, and culminated in the enactment by the 88th. Congress of a series of three pieces of legislation to stimulate research, training and service facilities for mental retardation. In 1965, the report of the Citizen's Committee to the Governor of Ohio specifically stressed the need for manpower training in University-Affiliated Facilities for the Mentally Retarded.

GOALS

The broad objectives of the Training Program are:

- to develop an interdisciplinary approach to mental retardation research;
- to provide interdisciplinary instruction in mental retardation;
- to disseminate information related to mental retardation;
- to develop and promote methods of prevention of mental retardation;
- to expand scientific knowledge in the diagnosis and treatment of the retarded;
- to extend the breadth and depth of both student involvement in the community and in-service instruction for professionals.

ORGANIZATION

To serve its complex objectives, the Training Program has a Policy Council consisting of the Deans of the participating Colleges; a Program Advisory Committee consisting of faculty representatives of many generic disciplines; a Liaison Advisory Committee consisting of representatives of state and community agencies; an administrative triad (listed below); and three Program Coordinators through whom the academic departments relate in order to achieve the stated program objectives.

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69-6

Innovative Use of Videotape
Instruction in Special Education Teacher Training

by

Donald C. Cavin

June, 1969

INNOVATIVE USE OF VIDEOTAPE INSTRUCTION
IN SPECIAL EDUCATION TEACHER TRAINING

A Paper Presented at
the Teacher Education Division Meeting
of the Council on Exceptional Children
New York, April 15, 1968
by Donald C. Cavin, Ed. D.
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Background of Study of Teacher/Pupil Interaction. Teacher training institutions in the past ten years have undergone severe criticism regarding the effectiveness, the purpose, and indeed, the necessity of their programs. In response to these critics, colleges of education have undertaken a variety of efforts to correct the basis for the attack as well as to improve the image of colleges of education. The more extreme courses pursued include reduction in the number of education hours required (and introduction of more subject matter), addition of a fifth year of training, enrollment of Arts College graduates in practicum experiences and seminars, and recruitment of honors program students for participation in specially selected student-teaching situations to provide them with a unique training experience. The one basic ingredient of all the training approaches is the inclusion of some type of exposure to a group of children in a learning situation.

Additional techniques employed to improve training include specialization in specific areas of elementary curriculum, utilization of audio-visual equipment and an increased sensitivity to the impact of sociology on education. (All are directed at achieving a sounder base for teaching through increased knowledge and improved technical skills).

Awareness of or exposure to these modification does not necessarily indicate an improved training experience. Research undertaken concurrently with this period of pedagogic purge, such as that of Flanders (1) and Allen (2), indicates that even

those individuals who are recognized as successful teachers must be introduced to the process of self-analysis and criticism. Reference is made to the study of the subtleties in the interaction between teacher and pupil first studied by Flanders and later by Allen. This interaction includes various teacher cues such as facial expression, vocal intonation, and, also, non-responsiveness which may exist through lack of oral comment or physical signaling. For example, we have long been aware of the importance of negating interpersonal cues during a standard testing situation. Yet it would seem we have not been aware that to develop the appropriate skills of influence would be a highly desirable component to incorporate in the training program of those whose main purpose is to influence.

Television and Videotape in Teacher Training. Until electronic equipment became economically feasible, we did not have the technology to record and review the gross and subtle aspects of teaching. Now a survey of the literature indicates that a variety of efforts have been undertaken to use television as a means of instruction in teacher training.

Schueler and Gold (3) at Hunter College made early use of live television on closed-circuit which permitted an observation opportunity for an increased number of students but at the same time did not provide control over on-going presentation.

The work of Burleigh and Peterson (4), presented in the October, 1967, Education School Journal, incorporated tapes as an instructional method in courses on principles of teaching and in supervision of student teaching. Among several valuable outgrowths from the original activity were: an analysis of the classroom; the fact that there was no limitation of time or number of viewers; they could replay the activity; the children made rapid and adequate adjustment to the camera; instructional tape could be made by editing and splicing or dubbing the material.

Some negative factors were: the time spent on preparing student for the taping, and, videotaping the entire student-teaching act plus conference time created a significant expenditure of manpower in an area already shorthanded. The activities of Burleigh and Peterson contributed two items which have direct application in teacher training: collecting tapes and including these in recommendations to potential employers, and, study of teacher-pupil interaction, self-evaluation, and how and what to analyze.

Peterson (5) in an article appearing in the Summer 1967 issue of the Journal of Teacher Education discussed these applications of videotape as a teacher training technique: an introduction to and practice in observation techniques; a supplement to live observation by providing a wide range of teachers, pupils and subject matter; as raw data for the analysis of all classroom behavior, both teacher and student; an illustration of effective and ineffective teaching methods. Peterson characterizes the second and fourth items as basically areas of supplemental improvements to existing practices of live observation; the first and third as "real" innovations because of the need to develop a clear understanding of the act of observing and the specific characteristics that should be observed.

Peterson feels that it should be, and indeed is, possible to create a composite tape of a variety of teaching styles which would be used to help determine how a person perceives teaching and what constitutes "good teaching." The tape could be used to establish what growth or changes took place during the training period and provide a base for more accurate judgment of the quality of performance. He also alluded to the use of videotape as a means of measuring the difference among groups such as administrators, experienced teachers, beginning teachers, and professors of education. There was speculation on how tape might provide more precise knowledge of the areas of classroom discipline and classroom management. Although

Peterson indicates that "we do not have at this time a sufficiently detailed study to determine the so-called principles of discipline, "it is known that there are effective means discussed by Flanders (1) and others which would provide a means of evaluating classroom behavior. It would be most interesting to identify and videotape the critical incidence situations in an environment as a means by which to prepare those in teacher training for specific problem settings.

Stohler (6) tested the hypothesis that different techniques of classroom observation result in different degrees of learning by teachers-in-training. Specifically, it was predicted that kinescope recordings prepared in advance provide a more effective medium of observation than closed-circuit television, and that television observation is in turn more effective than the traditional procedure of direct observation in the classroom. The hypothesis was tested by means of two measures. One measure consisted of student response to the observation techniques by means of an objective, multiple-choice test about methods of teaching which did not confirm the hypothesis. It did show systematic variation with several other experimental variables. The second measure, an essay examination, assessed the ability to evaluate critically an observed classroom lesson, revealing strong confirmation of the hypothesis. A significant finding indicated that the differential effect of this observational condition, when used by certain instructors, can outweigh the great importance of general scholastic ability as a correlate of gain in learning.

In August of 1967, an excellent publication entitled Television and Related Media in Teacher Education was made available through the Multi-State Teacher Education Project. This publication, edited by Howard Bosley and Harold Wigren (7), provided an observation of the status of videotape application in teacher education through mid-1967. Allen's contribution to this volume was a very concise overview

of the micro-teaching technique as applied at Stanford. The micro-teaching technique is a planned series of five-minute single-concept teaching experiences which allow the student an immediate evaluation, a subsequent planning session, and an opportunity to re-teach the same lesson without previous shortcomings. The application of videotape to this series of teach-evaluate-plan-re-teach activities permits a supervisor to review the students' work during the conference period by pointing out specific positive and negative behaviors, thereby using the conference time most efficiently. Each student or intern teaches two sequences in each of three weeks, followed by a week when the student plans a series of twenty-minute lessons. These lessons are taught during the first day of the clinic. Videotape affords efficient use of time, availability of reinforcement, repeat viewings of certain behaviors, and cumulative evidence of the intern's performance over the training period.

Research in Micro-Teaching. Weeb and Baird, in the Multi-State Teacher Education Project publication, reported on Selective Research in Micro-Teaching.

Stanford University -- Four micro-teaching clinics were conducted at Stanford from 1963 through 1966, in which a total of 459 students participated. During the first clinic, experimental and control groups were formed. The controls were given field observational experience and also acted as teacher aids. The experimental group had three micro-teaching experiences over eight weeks. Teaching performances were evaluated by the high school students being taught and by the Stanford supervisors. Both groups had been instructed in the rating process. The instrument used in the rating consisted of eight items graded on a five-point scale. The following findings were reported:

- "1. Candidates who trained in the micro-teaching sessions over an eight-

week period and spent less than ten hours per week in training performed at a higher level of teaching confidence than a similar group of candidates who received instruction and theory with an associated teacher-aid experience requiring twenty to twenty-five hours per week.

2. Performance in the micro-teaching situation was validated in classroom performance.
3. Over an eight-week period there was a significant increase in the accuracy of the candidate's self-perception of his weaknesses and strengths as a teacher.
4. Candidates who received student appraisal of their effectiveness improved significantly more in their teaching performance than candidates who did not.
5. Rating of video transcriptions of teacher encounters correlate positively with live ratings of the same encounter.
6. Trainees' acceptance of the value of micro-teaching is high.
7. Students' ratings of micro-teaching performances were more severe in their evaluation than those of the supervisors. After counseling the intern, supervisors tended to see improvement whether it was present or not.
8. Three skills subjected to experimental treatment in micro-teaching produced significant changes in the performance of intern teachers."

Bush and Allen reported in a Multi-State Teacher Education Project publication that an on-going evaluation of the project in 1964 substantiated their findings of 1963. In 1965, they again substantiated the earlier findings and

developed an instrument which was adopted as the Stanford Teacher Competency Appraisal Guide. When this instrument was compared with first and last micro-taught sessions, significant changes were found in twelve observation categories at a probability level of less than .01. The Stanford studies clearly established that micro-teaching offers realistic approximation of classroom teaching conditions and predicts subsequent classroom performance to a high degree of accuracy. Additionally, candidates receiving student feedback improved more significantly in their teaching performance than candidates not having access to such feedback. Stanford personnel are quoted as saying that "videotape recorders are a valuable adjunct to the micro-teaching process because of the immediate feedback available to the student teacher. It was further concluded that it is little help to merely sit and view the videotape in a global fashion. Specific things, one or two to look for, need to be pointed out to the teacher."

Although it was reported that Stanford has "done no empirical research on the in-service application of videotape, experiences Stanford had with school districts in northern California suggest that micro-teaching has potential for: determining the appropriate level of instructional material; pre-employment prediction by utilizing micro-teaching ratings; training of supervisors, and, continuing the supervision and evaluation of beginning teachers through teacher clinic and workshops."

Hunter College -- As mentioned earlier, Weeb and Baird described a project at Hunter College in which students in elementary teacher training were compared over a semester period as to gains in observed performance of teaching. It was hypothesized that supervision which utilized kinescope recordings made from original videotapes of a student teacher's performances would facilitate his

growth more than supervision which relied on verbal recall of performance. Data drawn from the analysis of scores on a classroom observation schedule, recorded interviews with student teachers, and reactions of the student teaching supervisors did not show significant differences between supervisory styles. The authors suggested that the following elements jeopardized the internal validity of the research: limited exposure of the student-teacher to the training method and limitation of the observation schedule. Both students and supervisor expressed positive opinions about the value of kinescope in training teachers, though no preference for kinescope was indicated.

Brigham Young University -- A third research project selected by Weeb and Baird was that conducted at Brigham Young University, where some 200 micro-teaching sessions had been held since Spring, 1966, with students in teacher education. B.Y.U. found that students reacted positively to the micro-teaching technique:

1. Ninety-five percent of those who received micro-teaching training judged the experience to be valuable or very valuable.
2. Students did not see themselves as performing atypically because of anxiety reactions in the micro-teaching program. Only in initial experiences and then only rarely was there evidence of performance distortion due to reaction.
3. Students who had received micro-teaching rated themselves as more nearly like the ideal teacher than did students who did not receive micro-teaching.
4. Students stressed the value in micro-teaching of helping the students to observe one or two specific discriminable actions within the teaching act as opposed to benefits derived from observing the total performance.

The application of micro-teaching in the Utah public schools related to in-service training has led to the following conclusions:

1. A taped micro-teaching session conducted in the public school setting is more threatening to experienced teachers than it is to college students.
2. Most experienced teachers overcome the fears of micro-teaching. This usually occurs after the first or second session of micro-teaching experience.
3. After the initial threat of the micro-teaching has passed, experienced teachers improve rapidly in achieving a specific discriminative skill or competency.
4. Experienced teachers who micro-teach and then view the playback of the performance privately, using an observation guide sheet to direct them, can be helped to make changes in their teaching behavior.

Brigham Young University is studying four general questions:

1. How does micro-teaching affect a teacher's concept of himself?
2. Under what conditions does the micro-teacher receive the most help from the critique of his efforts?
3. How best can micro-teaching be used in the training of a teacher? What kinds of micro-teaching experience are desirable at what point in the training?
4. What is the result of training when micro-teaching is substituted for all or part of the traditional student teaching experience?

Videotape in Special Education. An attempt has been made here to build perspective of what has been happening in the use of videotape in teacher training; nothing has been said about the application of videotape in special education. Little regarding

this subject can be found in the literature, though there are projects underway.

One such project is being conducted in the Eastern Michigan University Department of Special Education and Occupational Therapy (9). A closed-circuit television network established in the Rackham School on the campus of Eastern Michigan has been used mostly in traditional and established applications: exposing large numbers of students to lecture, preparing an extensive library of videotapes on a variety of special education teaching situations, and live viewing of classroom settings. In addition, they have applied close-up techniques for presenting examples of speech therapy, including a view of the mechanisms of speech. The taping of a particularly interesting case and the continued availability of that tape will enhance current and future instruction. The replay potential of videotape permits immediate review and analysis of the case. A technique has also been explored to provide a therapist with continuous directions during a demonstration by means of an intercom system. Although at Eastern Michigan these are not innovative approaches, it is likely they would be considered so in many other programs. Longitudinal records are being kept for both demonstration and case review. As the profession grows, modifies its interests and acquires better information about rehabilitation of speech and hearing disorders, the Eastern Michigan people feel currently accepted demonstration samples can be maintained.

Michigan State University researchers (10) are studying the kind of factors that can tie together the many separate activities that comprise the totality of the teaching act. This micro-teaching to macro-teaching process will enable students to analyze and then implement the skills of teaching.

Micro-Teaching in the Special Education Practicum. Teacher training and evaluation of performance through videotaping presents some interesting possibilities. It is

Apparent that videotape provides one very important dividend, the renewed attention drawn to the act of teaching and the specifics that comprise the teaching act. Videotaping permits capture and analysis of these acts through numerous reviews of a given teaching situation. A checklist of models of personal interaction will provide an invaluable technique for training.

1. Screening -- Consider also the use of videotape for identification and selection of personnel to train as teachers in special education classes. As in any other screening process, it would seem appropriate to initiate the use of videotape during the student's very first contact with the special education program. The new trainee could be tested in a short videotaped interaction session with a handicapped child, followed by a conference with videotape replay and a discussion of exhibited behaviors.
2. First level training -- A series of teach, evaluate, plan and re-teach would make it possible to evaluate who would need to experience repeat cycles and who would be able to go on to advanced levels of training.
3. Second level training -- This phase would consist of exposure to a group of children of two or more ability levels. The teach, evaluate, plan or re-trach cycle would be applied.
4. Third level training -- A full class session, teaching a lesson of twenty or thirty minutes' duration, would again follow the teach, evaluate, plan and re-teach format.

With an on-going seminar relative to each of the three levels of training described above, it is reasonable to expect that trainees with sufficient proficiency and competency could move through the training at their own pace. If it is true that individual personalities and individual approaches are important factors in successful teaching, then the individualized instructional process is a valid one in preparing teachers for special classes.

Innovative Aspects of Videotape. Micro-teaching is one approach which appears to be a most compatible technique for training special education personnel. Some of the many other applications in the flexibility of videotape which lend themselves to new and effective usage for such training are:

1. Providing direct observation for increased numbers of students with potential for structuring observational activity. Standardization of observation pattern would permit the development of a valid evaluation procedure.
2. Self-evaluation and critique mechanisms encourage the student in training to compare his performance with subsequent performances; a specific behavior checklist would enable him to modify his behavior with limited supervision.
3. Instructional tapes are feasible for general exposure to the teaching act or as single-concept clips. These tapes can be either unedited or staged productions, depending on the purpose.
4. Exemplary film clips which could be circulated with the student's credentials as evidence of his level of ability.
5. Modification of equipment allows for a great variety of innovative activities within the areas of established application. A few of these equipment developments are:
 - a. Sound dubbing on dual track equipment to allow for comment without losing the original sound.
 - b. Split screen; two camera with teacher and pupils being shown or two teaching situation of the same lesson, one showing the initial attempt and the other showing a later adjusted plan and technique.

- c. Remote control mike and receiver, remote control camera for panning, focus with zoom lens and wide angle.
- d. Improved lighting, and cameras effective in limited light.
- e. Mobil units with complete production capacity.
- f. Adaptive methods for using commercial units as monitors.
- g. Color cameras and monitors are currently being instituted in The Ohio State University Hospital telecommunications network. The possibilities of this color use would include visual aid instruction as well as other creative possibilities.

The conclusion that is drawn from the review of studies in television and videotape usage supports the idea that teacher training and, specifically, special education are entering a period of drastic modification. Analytical evaluation of the teaching act and the synthesis of the teaching model through the use of videotape review lends credence to the claim that there is a body of knowledge that can be called the science of education.

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